

Print

[illegible]

US-CL-CURRENT: 514/12; 435/196, 435/325, 435/6, 435/69.1, 435/7.1

[illegible]

DERWENT-ACC-NO: 2001-488887

DERWENT-WEEK: 200203

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE New isolated dual-specificity phosphatase polypeptide for treating cancer,
graft-versus-host disease, autoimmune diseases, allergies, metabolic diseases, abnormal
cell growth and abnormal cell proliferation

INVENTOR: LUCHE, R M; WEI, B

PRIORITY-DATA: 2000US-179886P (February 2, 2000), 2001US-0775925 (February 1, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200157221 A2	August 9, 2001	E	0&1	C12N015/55
US 20010049358 A1	December 6, 2001		000	C12N009/16
AU 200133252 A	August 14, 2001		000	C12N015/55

INT-CL (IPC): A61 K 39/395; C07 K 16/40; C12 N 5/06; C12 N 9/15; C12 N 15/11; C12 N
15/55; C12 P 21/02; C12 Q 1/42; C12 Q 1/68; G01 N 33/53

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

[Generate Collection](#)[Print](#)**Terms****Documents**

dsp-12 and phosphatase

3

Display Format: -[Change Format](#)[Previous Page](#)[Next Page](#)

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 21 through 30 of 70 returned.****21. Document ID: US 20020183249 A1**

LS: Entry 21 of 70

File: PGPB

Dec 5, 2002

PGPUB-DOCUMENT-NUMBER: 20020183249

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020183249 A1

TITLE: Method of identifying inhibitors of CDC25

PUBLICATION-DATE: December 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Taylor, Neil R.	Sydney	MA	AU	
Berhani, David	Worcester	MA	US	
Epstein, David	Belmont	NC	US	
Rudolph, Johannes	Durham	MA	US	
Ritter, Kurt	Newton	MA	US	
Fujimori, Taro	Shrewsbury	MA	US	
Robinson, Simon	Stow	MA	US	
Eckstein, Jens	Arlington	CA	US	
Haupt, Andreas	Schwetzingen	MA	DE	
Walker, Nigel	Burlingame	MA	US	
Dixon, Richard W.	Jefferson	MA	US	
Choquette, Deborah	Rutland	MA	US	
Blanchard, Jill	Arlington	MA	US	
Kluge, Arthur	Lincoln	MA	US	
Fal, Kollol	Needham	MA	US	
Bookovich, Nicholas	Malden	MA	US	
Come, Jon	Cambridge		US	
Hediger, Mark	Marlboro		US	

US CURRENT: 514, 12; 4-1, 226, 7-1, 12

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

22. Document ID: US 20020182203 A1

LS: Entry 22 of 70

File: 1111

12-1-02

22. 1111 1111 1111 1111 1111 1111 1111 1111 1111 1111

PUBLICATION-DATE: December 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Luche, Ralf M.	Seattle	WA	US	
Wei, Bo	Kirkland	WA	US	

US-CL-CURRENT: 424/94.6; 435/196, 435/320.1, 435/325, 435/69.1, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

23. Document ID: US 20020156247 A1

L3: Entry 23 of 70

File: PGPB

Oct 24, 2002

PGPUB-DOCUMENT-NUMBER: 20020156247

PGPUB-FILING-TYPE: new

DOCUMENT IDENTIFIED: US 20020156247 A1

TITLE: Mammalian checkpoint genes and proteins

PUBLICATION-DATE: October 24, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Elledge, Stephen J.	Houston	TX	US	
Sanchez, Yolanda	Cincinnati	OH	US	

US-CL-CURRENT: 530/389.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

24. Document ID: US 20020155505 A1

L3: Entry 24 of 70

File: PGPB

Oct 24, 2002

PGPUB-DOCUMENT-NUMBER: 20020155505

PGPUB-FILING-TYPE: new

DOCUMENT IDENTIFIED: US 20020155505 A1

TITLE: Methods for ligand discovery

PUBLICATION-DATE: October 24, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wells, Jim	Burlingame	CA	US	
Eriksson, Dan	San Francisco	CA	US	

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KIMC

25. Document ID: US 20020151561 A1

L3: Entry 25 of 70

File: PGPB

Oct 17, 2002

PGPUB-DOCUMENT-NUMBER: 20020151561
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020151561 A1

TITLE: Modulators of Protein Tyrosine Phosphatases (PTPases)

PUBLICATION-DATE: October 17, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Andersen, Henrik Sune	Lynghby	CA	DK	
Hansen, Thomas Kruse	Herlev	CA	DK	
Lau, Jesper	Farum	CA	DK	
Møller, Niels Peter Hundahl	København O	CA	DK	
Olsen, Ole Hvilsted	Bronshøj	WA	DK	
Axe, Frank Urban	Escondido	CA	US	
Bakir, Farid	San Diego	CA	US	
Ge, Yu	San Diego	CA	US	
Hilsworth, Daniel Dale	San Diego		US	
Judge, Luke Milburn	Seattle		US	
Newman, Michael James	San Diego		US	
Uyeda, Roy Teruyuki	San Diego		US	
Shapira, Barry Zvi	Acton		US	

US-CL-CURRENT: 514/301; 546/114

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KIMC

26. Document ID: US 20020150954 A1

L3: Entry 26 of 70

File: PGPB

Oct 17, 2002

PGPUB-DOCUMENT-NUMBER: 20020150954
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020150954 A1

TITLE: Compositions and methods for identifying agents which modulate PTEN function and PI-3 kinase pathways

PUBLICATION-DATE: October 17, 2002

INVENTOR-INFORMATION:

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KIMC

27. Document ID: US 20020137170 A1

L3: Entry 27 of 70

File: PGPB

Sep 26, 2002

PGPUB-DOCUMENT-NUMBER: 20020137170

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020137170 A1

TITLE: DSP-16 dual-specificity phosphatase

PUBLICATION-DATE: September 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Luche, Ralf M.	Seattle	WA	US	
Wei, Bo	Kirkland	WA	US	

US-CL-CURRENT: 435/196; 435/320.1, 435/325, 435/69.1, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KIMC

28. Document ID: US 20020116729 A1

L3: Entry 28 of 70

File: PGPB

Aug 22, 2002

PGPUB-DOCUMENT-NUMBER: 20020116729

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020116729 A1

TITLE: Transgenic mice containing NTP1 phosphatase gene disruptions

PUBLICATION-DATE: August 22, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Allen, Keith D.	Gary	NC	US	

US-CL-CURRENT: 520/18; 435/320.1, 435/325

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KIMC

29. Document ID: US 20020102693 A1

L3: Entry 29 of 70

File: PGPB

Aug 22, 2002

TITLE: DSP-16 dual-specificity phosphatase

PUBLICATION-DATE: August 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Luche, Ralf M.	Seattle	WA	US	

US-CL-CURRENT: [435/196](#); [435/320.1](#), [435/325](#), [435/69.1](#), [536/23.2](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

30. Document ID: US 20020102691 A1

L3: Entry 30 of 70

File: PGPB

Aug 1, 2002

PSPUB-DOCUMENT-NUMBER: 20020102691

PSPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020102691 A1

TITLE: Cytokine-, stress-, and oncoprotein-activated human protein kinase kinases

PUBLICATION-DATE: August 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Davis, Roger J.	Princeton	MA	US	
Raingaud, Joel	Palaiseau		FR	
Derijard, Benoit	Nice		FR	

US-CL-CURRENT: [435/194](#); [435/320.1](#), [435/325](#), [435/6](#), [435/69.1](#), [536/23.2](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

[Generate Collection](#)[Print](#)

Terms

dual specificity phosphatase?

Documents

70

Display Format: -[Change Format](#)[Previous Page](#)[Next Page](#)

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 41 through 50 of 70 returned.****41. Document ID: US 6566511 B2**

L3: Entry 41 of 70

File: USPT

May 20, 2003

US-PAT-NO: 6566511

DOCUMENT-IDENTIFIER: US 6566511 B2

TITLE: MAP kinase phosphatase mutant

DATE-ISSUED: May 20, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fevenkova; Ekaterina	Fort Lee	NJ		
Paszowski; Jurek	Del Mar	CA		

US-CL-CURRENT: 536/23.2; 435/196, 435/252.3, 435/320.1, 435/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

42. Document ID: US 6566133 B1

L3: Entry 42 of 70

File: USPT

May 20, 2003

US-PAT-NO: 6566133

DOCUMENT-IDENTIFIER: US 6566133 B1

TITLE: Antisense inhibition of dual specific phosphatase 9 expression

DATE-ISSUED: May 20, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lawrence; Lou M.	San Mateo	CA		

US-CL-CURRENT: 435/375; 514/44, 536/23.1, 536/24.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

DOCUMENT-IDENTIFIER: US 6551819 B1

TITLE: DSP-17 dual-specificity phosphatase

DATE-ISSUED: April 22, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lucke; Ralf M	Seattle	WA		
Wei; Bo	Kirkland	WA		

US-CL-CURRENT: [435/196](#); [435/252.3](#); [435/320.1](#); [435/325](#); [435/6](#); [536/23.2](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWIC

44. Document ID: US 6551809 B2

L3: Entry 44 of 70

File: USPT

Apr 22, 2003

US-PAT NO: 6551809

DOCUMENT-IDENTIFIER: US 6551809 B2

TITLE: Isolated human phosphatase proteins, nucleic acid molecules encoding human phosphatase proteins, and uses thereof

DATE-ISSUED: April 22, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yan; Chunhua	Boysds	MD		
Gan; Weiniu	Gaithersburg	MD		
Di Francesco; Valentina	Rickville	MD		
Beasley; Ellen M.	Darnestown	MD		

US-CL-CURRENT: [435/194](#); [435/252.3](#); [435/320.1](#); [530/350](#); [536/23.2](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWIC

45. Document ID: US 6541605 B1

L3: Entry 45 of 70

File: USPT

Apr 1, 2003

US-PAT NO: 6541605

DOCUMENT-IDENTIFIER: US 6541605 B1

TITLE: Cytokine-, stress-, and oncoprotein-activated human protein kinase kinases

DATE ISSUED: April 1, 2003

NAME	CITY	STATE	ZIP CODE	COUNTRY
Davis; Roger J.	Princeton	MA		
Faingaud; Joel	Palaiseau			FF
Lerijard; Benoit	Nice			FF

US-CL-CURRENT: 536/350; 435/6, 435/7.1, 435/91.1, 435/91.2, 536/22.1, 536/23.1, 536/24.3, 536/24.31, 536/24.32, 536/24.33

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

46. Document ID: US 6518029 B1

LS: Entry 46 of 70

File: USPT

Feb 11, 2003

US-PAT-NO: 6518029

DOCUMENT-IDENTIFIER: US 6518029 B1

TITLE: Human hydrolase-like molecules

DATE-ISSUED: February 11, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bandman; Olga	Mountain View	CA		
Lal; Preeti	Santa Clara	CA		
Hillman; Jennifer L.	Mountain View	CA		
Corley; Neil C.	Mountain View	CA		
Guegler; Karl J.	Menlo Park	CA		
Shah; Purvi	Sunnyvale	CA		

US-CL-CURRENT: 435/7.1; 435/183, 435/193, 435/194, 435/195, 435/196, 435/7.21, 435/7.4, 530/35

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

47. Document ID: US 6492157 B1

LS: Entry 47 of 70

File: USPT

Feb 11, 2002

US-PAT-NO: 6492157

DOCUMENT-IDENTIFIER: US 6492157 B1

TITLE: DSP-9 dual-specificity phosphatase

DATE-ISSUED: December 10, 2002

INVENTOR-INFORMATION:

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KWIC

48. Document ID: US 6482644 B1

L3: Entry 48 of 70

File: USPT

Nov 19, 2002

US-PAT-NO: 6482644

DOCUMENT-IDENTIFIER: US 6482644 B1

TITLE: Antisense modulation of dual specific phosphatase 8 expression

DATE-ISSUED: November 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cowser; Lex M.	San Mateo	CA		

US-CL-CURRENT: 435/375; 435/325, 435/366, 435/6, 435/91.1, 536/23.1, 536/24.31,
536/24.33, 536/24.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KWIC

49. Document ID: US 6436642 B1

L3: Entry 49 of 70

File: USPT

Aug 20, 2002

US-PAT NO: 6436642

DOCUMENT-IDENTIFIER: US 6436642 B1

TITLE: Method of classifying a thyroid carcinoma using differential gene expression

DATE-ISSUED: August 20, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gould-Rothberg; Bonnie E.	Guilford	CT		
Rastelli; Luca	Guilford	CT		

US-CL-CURRENT: 435/6; 435/24.31, 435/24.33

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KWIC

50. Document ID: US 6420153 B1

L3: Entry 50 of 70

File: USPT

Nov 19, 2002

DATE-ISSUED: July 16, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meyers, Rachel A.	Newton	MA		
Weich, Nadine	Brookline	MA		

US-CL-CURRENT: 435/196, 435/252.3, 435/323.1, 435/325, 536/23.1, 536/23.2, 536/24.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

[Generate Collection](#)[Print](#)**Terms****Documents**

dual specificity phosphatase?

70

Display Format: -[Change Format](#)[Previous Page](#)[Next Page](#)

WEST Search History

DATE: Thursday, May 29, 2003

Set Name Query
side by side

Hit Count Set Name
result set

DB USPT,PGPB,JPAB,EPAB,DWPI; PLUR YES; OP ADJ

L13	Leu Val His Cys Lys Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met	0	L13
L12	I3 and DNA	65	L12
L11	Leu Val His Cys Lys Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys Glu Phe Gly Trp Pro Leu Glu Lys Ala	0	L11
L10	Leu Val His Cys Lys Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys Glu Phe Gly Trp Pro Leu Glu Lys Ala Tyr Asn Tyr Val Lys Gln Lys Arg Ser Ile Thr Arg Pro Asn Ala Gly Phe Met Arg Gln Leu Ser Glu Tyr Glu Gly Ile Leu Asp Ala	0	L10
L9	Leu Val His Cys Lys Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys Glu Phe Gly Trp Pro Leu Glu Lys Ala Tyr Asn Tyr Val Lys Gln Lys Arg Ser Ile Thr Arg Pro Asn Ala Gly Phe Met Arg Gln Leu Ser Glu Tyr Glu Gly Ile Leu Asp Ala Ser Lys Gln Arg His Asn Lys Leu Trp Arg Gln Gln Thr Asp Ser Ser Leu Gln Gln Pro Val Asp Asp Pro Ala Gly Pro Gly Asp Phe	0	L9
L8	Leu Val His Cys Lys Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys Glu Phe Gly Trp Pro Leu Glu Lys Ala Tyr Asn Tyr Val Lys Gln Lys Arg Ser Ile Thr Arg Pro Asn Ala Gly Phe Met Arg Gln Leu Ser Glu Tyr Glu Gly Ile Leu Asp Ala Ser Lys Gln Arg His Asn Lys Leu Trp Arg Gln Gln Thr Asp Ser Ser Leu Gln Gln Pro Val Asp Asp Pro Ala Gly Pro Gly Asp Phe Leu Pro Glu Thr Pro Asp Gly Thr Pro Glu	0	L8
L7	Leu Val His Cys Lys Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys Glu Phe Gly Trp Pro Leu Glu Lys Ala Tyr Asn Tyr Val Lys Gln Lys Arg Ser Ile Thr Arg Pro Asn Ala Gly Phe Met Arg Gln Leu Ser Glu Tyr Glu Gly Ile Leu Asp Ala Ser Lys Gln Arg His Asn Lys Leu Trp Arg Gln Gln Thr Asp Ser Ser Leu Gln Gln Pro Val Asp Asp Pro Ala Gly Pro Gly Asp Phe Leu Pro Glu Thr Pro Asp Gly Thr Pro Glu Ser Gln Leu Pro Phe Leu Asp Asp Ala Ala	0	L7
L6	Leu Val His Cys Lys Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys Glu Phe Gly Trp Pro Leu Glu Lys Ala Tyr Asn Tyr Val Lys Gln Lys Arg Ser Ile Thr Arg Pro Asn Ala Gly Phe Met Arg Gln Leu Ser Glu Tyr Glu Gly Ile Leu Asp Ala Ser Lys Gln Arg His Asn Lys Leu Trp Arg Gln Gln Thr Asp Ser Ser Leu Gln Gln Pro	0	L6

Leu Val His Cys Lys Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile
Ala Tyr Ala Met Lys Glu Phe 260 265 270 Gly Trp Pro Leu Glu Lys

	Ala Tyr Asn Tyr Val Lys Gln Lys Arg Ser 275 280 285 Ile Thr Arg Pro Asn Ala Gly Phe Met Arg Gln Leu Ser Glu Tyr Glu 290 295 300		
L5	Gly Ile Leu Asp Ala Ser Lys Gln Arg His Asn Lys Leu Trp Arg Gln 305 310 315 320 Gln Thr Asp Ser Ser Leu Gln Gln Pro Val Asp Asp Pro Ala Gly Pro Gly Asp Phe Leu Pro Glu Thr Pro Asp Gly Thr Pro Glu Ser Gln Leu Pro Phe Leu Asp Asp Ala Ala Gln Pro Gly Leu Gly Pro Pro Leu Pro	0	L5
	Leu Val His Cys Lys Met Gly 245 250 255 Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys Glu Phe 260 265 270 Gly Trp Pro Leu Glu Lys Ala Tyr Asn Tyr Val Lys Gln Lys Arg Ser 275 280 285 Ile Thr Arg Pro Asn Ala Gly Phe Met Arg Gln Leu Ser Glu Tyr Glu		
L4	290 295 300 Gly Ile Leu Asp Ala Ser Lys Gln Arg His Asn Lys Leu Trp Arg Gln 305 310 315 320 Gln Thr Asp Ser Ser Leu Gln Gln Pro Val Asp Asp Pro Ala Gly Pro 325 330 335 Gly Asp Phe Leu Pro Glu Thr Pro Asp Gly Thr Pro Glu Ser Gln Leu Pro Phe Leu Asp Asp Ala Ala Gln Pro Gly Leu Gly Pro Pro Leu Pro	0	L4
L3	dual specificity phosphatase?	70	L3
L2	dual specifity phosphatase	0	L2
L1	dsp-12 and phosphatase	3	L1

END OF SEARCH HISTORY

GENOME
RESEARCHCloning for
the future... **NEW ENGLAND
BioLabs**[HOME](#) [HELP](#) [FEEDBACK](#) [SUBSCRIPTIONS](#) [ARCHIVE](#) [SEARCH](#) [TABLE OF CONTENTS](#)Institution: **US PATENT & TRADEMARK OFFICE** [Sign In as Individual](#)

Genome Research, Vol 6, 791-806, Copyright © 1996 by Cold Spring Harbor Laboratory Press

ARTICLES

Normalization and subtraction: two approaches to facilitate gene discovery

MF Bonaldo, G Lennon and MB Soares

Department of Psychiatry, College of Physicians and Surgeons of Columbia University, New York, New York, USA.

- ▶ [Email this article to a friend](#)
- ▶ [Similar articles found in:](#)
 - [Genome Online](#)
 - [PubMed](#)
- ▶ [PubMed Citation](#)
- ▶ This Article has been cited by:
 - [other online articles](#)
- ▶ Search Medline for articles by:
 - [Bonaldo, M. F. || Soares, M. B.](#)
- ▶ Alert me when:
 - [new articles cite this article](#)
- ▶ [Download to Citation Manager](#)

Large-scale sequencing of cDNAs randomly picked from libraries has proven to be a very powerful approach to discover (putatively) expressed sequences that, in turn, once mapped, may greatly expedite the process involved in the identification and cloning of human disease genes. However, the integrity of the data and the pace at which novel sequences can be identified depends to a great extent on the cDNA libraries that are used. Because altogether, in a typical cell, the mRNAs of the prevalent and intermediate frequency classes comprise as much as 50-65% of the total mRNA mass, but represent no more than 1000- 2000 different mRNAs, redundant identification of mRNAs of these two frequency classes is destined to become overwhelming relatively early in any such random gene discovery programs, thus seriously compromising their cost-effectiveness. With the goal of facilitating such efforts, previously we developed a method to construct directionally cloned normalized cDNA libraries and applied it to generate infant brain (INIB) and fetal liver/spleen (INFLS) libraries, from which a total of 45,192 and 86,088 expressed sequence tags, respectively, have been derived. While improving the representation of the longest cDNAs in our libraries, we developed three additional methods to normalize cDNA libraries and generated over 35 libraries, most of which have been contributed to our integrated Molecular Analysis of Genomes and Their Expression (IMAGE) Consortium and thus distributed widely and used for sequencing and mapping. In an attempt to facilitate the process of gene discovery further, we have also developed a subtractive hybridization approach designed specifically to eliminate (or reduce significantly the representation of) large pools of arrayed and (mostly) sequenced clones from normalized libraries yet to be (or just partly) surveyed. Here we present a detailed description and a comparative analysis of four methods that we developed and used to generate normalize cDNA libraries from human (15), mouse (3), rat (2), as well as the parasite *Subietta* (1), *Trypanosoma* (1), *Brucella* (1), *Leishmania* (1), *Helicobacter* (1).

Welcome to STN International! Enter xix

* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 15:41:30 ON 29 MAY 2003

=> file medline caplus biosis biotechds scisearch embase

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'MEDLINE' ENTERED AT 15:42:18 ON 29 MAY 2003

FILE 'CAPLUS' ENTERED AT 15:42:18 ON 29 MAY 2003

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'BIOSIS' ENTERED AT 15:42:18 ON 29 MAY 2003

COPYRIGHT (C) 2003 BIOLOGICAL ABSTRACTS INC.(R)

FILE 'BIOTECHDS' ENTERED AT 15:42:18 ON 29 MAY 2003

COPYRIGHT (C) 2003 THOMSON DEERWENT AND INSTITUTE FOR SCIENTIFIC INFORMATION

FILE 'SCISEARCH' ENTERED AT 15:42:18 ON 29 MAY 2003

COPYRIGHT 2003 THOMSON ISI

FILE 'EMBASE' ENTERED AT 15:42:18 ON 29 MAY 2003

COPYRIGHT (C) 2003 Elsevier Science B.V. All rights reserved.

=> s Leu Val His Cys Lys Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala
Met Lys Glu Phe Gly Trp Pro Leu Glu Lys

L1 0 LEU VAL HIS CYS LYS MET GLY VAL SER ARG SER ALA SER THR VAL ILE
ALA TYR ALA MET LYS GLU PHE GLY TRP PRO LEU GLU LYS

=> s Leu Val His Cys Lys Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala
Met

L1 0 LEU VAL HIS CYS LYS MET GLY VAL SER ARG SER ALA SER THR VAL ILE
ALA TYR ALA MET

=> s Leu Val His Cys Lys Met Gly Val Ser Arg Ser

L1 0 LEU VAL HIS CYS LYS MET GLY VAL SER ARG SER

=> s Leu Val His Cys Lys

L4 0 LEU VAL HIS CYS LYS

=> s Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys Glu Phe Gly
Trp Pro Leu Glu Lys

L1 0 MET GLY VAL SER ARG SER ALA SER THR VAL ILE ALA TYR ALA MET LYS

[illegible]

LANGUAGE: English
FAMILY APP. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003015196	A2	20030327	WO 2002 US15906	20020516

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, FI, GB, GD, GE, GH, GM, HP, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

FW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2003092114	A1	20030915	US 2001-151520	20020516
---------------	----	----------	----------------	----------

PRIORITY APPLN. INFO.: US 2001-221476P P 20010516

AB Comps. and methods are provided for the treatment of conditions assocd. with cell proliferation, cell differentiation and/or cell survival. In particular, the cDNA sequences and the encoded amino acid sequences of human dual-specificity protein tyrosine **phosphatase** DSP-18 isoforms DSP-18a-f, and polypeptide variants thereof that stimulate dephosphorylation of DSP-18 substrates, are provided. DSP-18 dephosphorylates an activated MAP kinase. The polypeptides may be used, for example, to identify antibodies and other agents that inhibit DSP-18 activity. The polypeptides and agents may be used to modulate cell proliferation, cell differentiation and cell survival.

L12 ANSWER 2 OF 19 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:256483 CAPLUS

DOCUMENT NUMBER: 136:230009

TITLE: Protein and cDNA sequences of a novel human protein DSP-16 with dual-specificity MAP kinase **phosphatase** activity, and therapeutic uses thereof

INVENTOR(S): Luche, Ralf M.; Wei, Bo

PATENT ASSIGNEE(S): Ceptr, Inc., USA

SOURCE: PCT Int. Appl., 87 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY APP. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002026997	A2	20020404	WO 2001-US30124	20010925
WO 2002026997	A3	20030109		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, FI, GB, GD, GE, GH, GM, HP, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NO, NZ, PH, PL,

US 2002137170 A1 20020926 US 2001-964277 20010925
 PRIORITY APPLN. INFO.: US 2000-235487P P 20000926
 WO 2001-US30124 W 20010925

AB The invention provides protein and cDNA sequences of a novel human protein DSP-16, which has sequences homol. with dual-specificity MAP kinase **phosphatase**. The protein DSP-16 may be used, for example, to identify antibodies and other agents that inhibit DSP-16 activity. Semiquant. PCR results show significantly higher levels of DSP-16 mRNA in tissues of skeletal muscles. The invention further relates to the uses of protein DSP-16 for modulating cell proliferation, differentiation and survival.

L12 ANSWER 3 OF 1 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:240916 CAPLUS
 DOCUMENT NUMBER: 136:274399
 TITLE: Protein and cDNA sequences of the novel protein DSP-15 from human and mouse, with dual-specificity MAP kinase **phosphatase** activity, and therapeutic uses thereof
 INVENTOR(S): Luche, Ralf M.; Wei, Bo
 PATENT ASSIGNEE(S): Ceptry, Inc., USA
 SOURCE: PCT Int. Appl., 51 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002024740	A2	20020328	WO 2001-US29406	20010919
WO 2002024740	A3	20021205		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BE, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, EC, EE, ES, FI, GB, GD, GE, GH, GM, HE, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UC, VN, YU, ZA, ZW, AM, AS, BY, EG, KZ, MD, RU, TC, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SN, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2002132203	A1	20021205	US 2001-955732	20010918
AU 2001091146	A5	20020402	AU 2001-91146	20010919

PRIORITY APPLN. INFO.: US 2000-235487P P 20000926
 US 2001-955732 A 20010918
 WO 2001-US30124 W 20010925

AB The invention provides protein and cDNA sequences of novel human and mouse protein DSP-15, which has sequences homol. with dual-specificity MAP kinase **phosphatase**. The protein DSP-15 may be used, for example, to identify antibodies and other agents that inhibit DSP-15 activity. Semiquant. PCR results show significantly higher levels of DSP-15 mRNA in tissues of skeletal muscles. The invention further relates to the uses of protein DSP-15 for modulating cell proliferation, differentiation and survival.

phosphatase activity, and therapeutic uses
thereof

INVENTOR(S) : **Luche, Ralf M.; Wei, Bo**
PATENT ASSIGNEE(S) : **Ceptor, Inc., USA**
SOURCE: **PCT Int. Appl., 79 pp.**
CODEN: PIXXD2
DOCUMENT TYPE: **Patent**
LANGUAGE: **English**
FAMILY ACC. NUM. COUNT: **1**
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001083723	A2	20011108	WO 2001-US14076	20010501
WO 2001083723	A3	20020502		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BS, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, NO, NI, NL, PT, RO,
RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,
VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GM, GN, HE, LS, MW, ME, SD, SL, SE, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 2002102693	A1	20020502	US 2001-847519	20010501
---------------	----	----------	----------------	----------

PRIORITY APPLN. INFO.: **US 2000-201322P P 20000502**

AB The invention provides protein and cDNA sequences of a novel human protein DSP-14, which has sequences homologous with dual-specificity MAP kinase **phosphatase**. The protein DSP-14 may be used, for example, to identify antibodies and other agents that inhibit DSP-14 activity. Semiquant. PCR results show significantly higher levels of DSP-14 mRNA in tissues of skeletal muscles. The invention further relates to the uses of protein DSP-14 for modulating cell proliferation, differentiation and survival.

L12 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: **2001:582056 CAPLUS**

DOCUMENT NUMBER: **135:163437**

TITLE: **Protein and cDNA sequences of novel human proteins DSP-12 and DSP-13 with dual-specificity MAP kinase phosphatase activity, and therapeutic uses thereof**

INVENTOR(S): **Luche, Ralf M.; Wei, Bo**
PATENT ASSIGNEE(S) : **Ceptor, Inc., USA**
SOURCE: **PCT Int. Appl., 79 pp.**
CODEN: PIXXD2
DOCUMENT TYPE: **Patent**
LANGUAGE: **English**
FAMILY ACC. NUM. COUNT: **1**
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001083723	A2	20011108	WO 2001-US14076	20010501
WO 2001083723	A3	20020502		

AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BS, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, NO, NI, NL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, RW, GM, GN, HE, LS, MW, ME, SD, SL, SE, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

YU, ZA, ZW, AM, AS, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 2001049353 A1 20011206 US 2001-775925 20010201

PRIORITY APPLN. INFO.: US 2000-179886P P 20000202

AB The invention provides protein and cDNA sequences of novel human proteins DSP-12 and DSP-13, which have sequences homol. with dual-specificity MAP kinase **phosphatase**. The proteins DSP-12 and DSP-13 may be used, for example, to identify antibodies and other agents that inhibit DSP-12 or DSP-13 activity. RT-PCR anal. shows DSP-12 and DSP-13 mRNAs in all human tissues analyzed, including brain, thymus, placenta, skeletal muscle, heart, pancreas, testis, adipose and liver. The invention further relates to the uses of proteins DSP-12 and DSP-13 for modulating cell proliferation, differentiation and survival. In addn., the invention also provides protein and cDNA sequences of DSP-13 splice variant.

L12 ANSWER 6 OF 19 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:4167 CAPLUS

DOCUMENT NUMBER: 194:116840

TITLE: Protein and cDNA sequences of a novel human protein DSP-11 with dual-specificity MAP kinase **phosphatase** activity, and therapeutic uses thereof

INVENTOR(S): **Luche, Ralf M.**; Wei, Bo

PATENT ASSIGNEE(S): Ceptor, Inc., USA

SOURCE: PCT Int. Appl., 45 pp.

CODEN: PIMXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001035983	A1	20010125	WO 2000-US19710	20000719
W:		AE, AG, AL, AM, AT, AU, AZ, BA, BE, BG, BF, BY, BZ, CA, CH, CN, CR, CU, CE, DE, DK, DM, DO, EE, ES, FI, GE, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NC, NE, NL, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AS, BY, KG, KZ, MD, RU, TJ, TM		
RW:		GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		
EP 1111195	A1	20010125	EP 1111195	20010125
E:		AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, SE, SK, SI, TR, TJ, TM, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AS, BY, KG, KZ, MD, RU, TJ, TM		

JP 2001-511195 20000719

PRIORITY APPLN. INFO.: US 1999-144557P P 19990720

WO 2000-US19710 W 20000719

AB The invention provides protein and cDNA sequences of a novel human protein DSP-11, which has sequences homol. with dual specificity MAP kinase **phosphatase**. The protein DSP-11 may be used, for example, to

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 7 OF 19 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:31653 CAPLUS

DOCUMENT NUMBER: 154:30280

TITLE: Protein and cDNA sequences of a novel human and mouse protein DDP-3 with dual-specificity MAP kinase phosphatase activity, and therapeutic uses thereof

INVENTOR(S): Lucbe, Ralf M.; Wei, Bo

PATENT ASSIGNER(S): Ceptra, Inc., USA

SOURCE: PCT Int. Appl., 86 pp.

CODEN: PIRKDI

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001009532	A1	20010111	WO 2000-US13207	20000629
W:	AE, AG, AL, AM, AN, AP, AQ, AR, AS, BA, BE, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, GR, GU, HA, HE, HF, HG, HI, IL, IN, IO, IP, IR, IS, IT, JP, KE, KG, KH, KI, KM, KN, KR, KS, KU, KY, LA, LB, LC, LE, LG, LI, LU, LV, MA, MD, ME, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NC, NE, NG, NI, NL, NO, NP, NR, NT, NU, NZ, OI, OM, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PE, PF, PG, PH, PI, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PY, PZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RS, RU, RW, SA, SB, SC, SD, SE, SG, SI, SK, SL, SM, SN, SO, SP, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TR, TT, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UP, UQ, UR, US, UT, UV, UW, UX, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ			
WO 2000060091	A2	20001012	WO 2000-US9185	20000407
WO 2000060091	A3	20010104		
WO 2000060091	C2	20020329		
W:	AE, AG, AL, AM, AN, AP, AQ, AR, AS, BA, BE, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, GR, GU, HA, HE, HF, HG, HI, IL, IN, IO, IP, IR, IS, IT, JP, KE, KG, KH, KI, KM, KN, KR, KS, KU, KY, LA, LB, LC, LE, LG, LI, LU, LV, MA, MD, ME, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NC, NE, NG, NI, NL, NO, NP, NR, NT, NU, NZ, OI, OM, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PE, PF, PG, PH, PI, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PY, PZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RS, RU, RW, SA, SB, SC, SD, SE, SG, SI, SK, SL, SM, SN, SO, SP, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TR, TT, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UP, UQ, UR, US, UT, UV, UW, UX, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ			
WO 2000060091	A1	20010111	WO 2000-US13207	20000629
W:	AE, AG, AL, AM, AN, AP, AQ, AR, AS, BA, BE, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, GR, GU, HA, HE, HF, HG, HI, IL, IN, IO, IP, IR, IS, IT, JP, KE, KG, KH, KI, KM, KN, KR, KS, KU, KY, LA, LB, LC, LE, LG, LI, LU, LV, MA, MD, ME, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NC, NE, NG, NI, NL, NO, NP, NR, NT, NU, NZ, OI, OM, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PE, PF, PG, PH, PI, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PY, PZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RS, RU, RW, SA, SB, SC, SD, SE, SG, SI, SK, SL, SM, SN, SO, SP, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TR, TT, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UP, UQ, UR, US, UT, UV, UW, UX, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ			
WO 2000060091	A1	20010111	WO 2000-US13207	20000629
W:	AE, AG, AL, AM, AN, AP, AQ, AR, AS, BA, BE, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, GR, GU, HA, HE, HF, HG, HI, IL, IN, IO, IP, IR, IS, IT, JP, KE, KG, KH, KI, KM, KN, KR, KS, KU, KY, LA, LB, LC, LE, LG, LI, LU, LV, MA, MD, ME, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NC, NE, NG, NI, NL, NO, NP, NR, NT, NU, NZ, OI, OM, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PE, PF, PG, PH, PI, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PY, PZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RS, RU, RW, SA, SB, SC, SD, SE, SG, SI, SK, SL, SM, SN, SO, SP, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TR, TT, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UP, UQ, UR, US, UT, UV, UW, UX, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ			

EP 1165325 A1 20020410 EP 1165325 A2 20020410

AB The invention provides protein and cDNA sequences of novel human and mouse protein DSP-3, which has sequences homologous with dual-specificity MAP kinase **phosphatase**. The protein DSP-3 may be used, for example, to identify antibodies and other agents that inhibit DSP-3 activity. North blotting results show significantly higher levels of DSP-3 mRNA in tissues of heart, liver, skeletal muscle and pancreas. The invention further relates to the uses of protein DSP-3 for modulating cell proliferation, differentiation and survival.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 8 OF 19 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 2001:01657 CAPLUS

DOCUMENT NUMBER: 134:06285

TITLE: Protein and cDNA sequences of a novel human protein DSP-3 with dual-specificity MAP kinase **phosphatase** activity, and therapeutic uses thereof

INVENTOR(S): Luche, Ralf M.; Wei, Bo

PATENT ASSIGNEE(S): Ceptra, Inc., USA

SOURCE: EST Int. Appl., 70 pp.

CODEN: PIMXDE

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001002581	A1	20010111	WO 2000-US10868	20000420
W:	AE, AG, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CE, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, GR, GU, HD, HE, HF, HG, HH, HI, HM, HN, HO, HP, HQ, HR, HS, HT, HU, ID, IL, IN, IS, IT, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, BG, BE, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TC, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
WO 2000000092	A2	20001012	WO 2000-US9185	20000407
WO 2000000092	A3	20010104		
WO 2000000092	C2	20020119		
W:	AE, AG, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CE, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, GR, GU, HD, HE, HF, HG, HH, HI, HM, HN, HO, HP, HQ, HR, HS, HT, HU, ID, IL, IN, IS, IT, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, BG, BE, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TC, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
WO 2000-US18207	A1	20010111	WO 2000-US18207	20000420
W:	AE, AG, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CE, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, GR, GU, HD, HE, HF, HG, HH, HI, HM, HN, HO, HP, HQ, HR, HS, HT, HU, ID, IL, IN, IS, IT, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, BG, BE, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TC, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			

DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
CF, CG, CI, CM, GA, GN, GW, ML, MF, NE, SN, TD, TG
EP 1196598 A1 20020417 EP 2000-943359 20000629
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO

PRIORITY APPLN. INFO.: US 1999-142338P P 19990702
WO 2000-US9185 A 20000407
US 1999-128225P P 19990407
WO 2000-US10968 A 20000420
WO 2000-US18217 W 20000629

AB The invention provides protein and cDNA sequences of a novel human protein DSP-3, which has sequences homol. with dual-specificity MAP kinase **phosphatase**. The protein DSP-3 may be used, for example, to identify antibodies and other agents that inhibit DSP-3 activity. North blotting results show significantly higher levels of DSP-3 mRNA in tissues of heart, liver, skeletal muscle and pancreas. The invention further relates to the uses of protein DSP-3 for modulating cell proliferation, differentiation and survival.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 2000:772772 CAPLUS

DOCUMENT NUMBER: 133:330559

TITLE: Protein and cDNA sequences of a novel human protein DSP-3 with dual-specificity MAP kinase **phosphatase** activity, and therapeutic uses thereof

INVENTOR(S): **Luche, Ralf M.**; Wei, Bo

PATENT ASSIGNEE(S): Ceptyr, Inc., USA

SOURCE: ECT Int. Appl., 36 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000065069	A1	20001102	WO 2000-US11665	20000426

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, ME, MG, MK, MN, MX, MY, NC, NZ, PL, PT, RO, RU, SI, SE, SG, SI, SK, SL, TH, TM, TR, TT, TZ, UA, UG, UN, UZ, VN, YU, ZA, ZW, AM, AN, AY, BA, BE, BI, BU, BV, TW, TM

EW: BR, BG, BE, BS, MX, SI, SL, SE, TE, US, AT, BE, CH, CY, IE, IL, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

JP 2002542786	T2	20021217	JP 2000-614403	20000426
---------------	----	----------	----------------	----------

PRIORITY APPLN. INFO.: US 1999-131156P P 19990427
US 2000-564357 A 20000424
WO 2000-US11665 W 20000426

AB The invention provides protein and cDNA sequences of a novel human protein

proliferation, differentiation and survival.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 10 OF 19 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:772771 CAPLUS

DOCUMENT NUMBER: 133:330558

TITLE: Protein and cDNA sequences of a novel human protein
DSP-1 with dual-specificity MAP kinase
phosphatase activity, and therapeutic uses
thereof

INVENTOR(S): Luche, Ralf M.; Wei, Bo

PATENT ASSIGNEE(S): Cepty, Inc., USA

SOURCE: PCT Int. Appl., 65 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WD 200005063	A1	20001102	WO 2000-US10966	20000420
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GI, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NC, ND, NL, NO, NZ, PL, PT, RO, RU, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KE, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
EP 1173537	A1	20020123	EP 2000-923331	20000420
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LN, FI, RO			
JP 2002542735	T2	20021217	JP 2000-614402	20000420
US 6551810	B1	20030422	US 2000-557921	20000420
PRIORITY APPLN. INFO.:			US 1994-130836P P	19990423
			WO 2000-US10966 W	20000420

AB The invention provides protein and cDNA sequences of a novel human protein DSP-10, which has sequences homologous with dual-specificity MAP kinase **phosphatase**. The protein DSP-10 may be used, for example, to identify antibodies and other agents that inhibit DSP-10 activity. North blotting results show significantly higher levels of DSP-10 mRNA in tissues of human skeletal muscle and liver. The invention further relates to the use of protein DSP-10 in modulating cell proliferation, differentiation and survival.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 11 OF 19 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:756875 CAPLUS

DOCUMENT NUMBER: 133:318358

TITLE: Protein and cDNA sequences of a novel human protein

DOCUMENT TYPE: COLEN: PXXXX
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: English
 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000/033393	A1	20001026	WO 2000-US10508	20000419
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NC, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GN, GW, ML, MR, NE, SN, TD, TG EP 1173586 A1 20020113 EP 2001-026123 20000419 P: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO JP 2002541852 T2 20021210 JP 2000-612472 20000419 PRIORITY APPLN. INFO.: US 1999-130173P P 19990420 WO 2000-US10508 W 20000419 AB The invention provides protein and cDNA sequences of a novel human protein DSP-8, which has sequences homologous with dual-specificity MAP kinase phosphatase . The protein DSP-8 may be used, for example, to identify antibodies and other agents that inhibit DSP-8 activity. North blotting results show significantly higher levels of DSP-8 mRNA in tissues of testis. The invention further relates to the uses of protein DSP-8 for modulating cell proliferation, differentiation and survival. REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT				

L12 ANSWER 12 OF 19 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2000:725785 CAPLUS
 DOCUMENT NUMBER: 133:291978
 TITLE: Protein and cDNA sequences of a novel human protein
 DSP-9 with dual-specificity MAP kinase
phosphatase activity, and therapeutic uses
 thereof
 INVENTOR(S): Lucbe, Ralf M.; Wei, Bo
 PATENT ASSIGNEE(S): Ceptr, Inc., USA
 SOURCE: PCT Int. Appl., 66 pp.
 COLEN: PXXXX
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000/033393	A1	20001026	WO 2000-US10508	20000419
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NC, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GN, GW, ML, MR, NE, SN, TD, TG EP 1173586 A1 20020113 EP 2001-026123 20000419 P: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO JP 2002541852 T2 20021210 JP 2000-612472 20000419 PRIORITY APPLN. INFO.: US 1999-130173P P 19990420 WO 2000-US10508 W 20000419 AB The invention provides protein and cDNA sequences of a novel human protein DSP-8, which has sequences homologous with dual-specificity MAP kinase phosphatase . The protein DSP-8 may be used, for example, to identify antibodies and other agents that inhibit DSP-8 activity. North blotting results show significantly higher levels of DSP-8 mRNA in tissues of testis. The invention further relates to the uses of protein DSP-8 for modulating cell proliferation, differentiation and survival. REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT				

BK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
 CG, CI, CM, SA, SN, SW, ML, MR, NE, SN, TD, TG
 US 6492157 B1 20021210 US 2000-544716 20000406
 EP 1169459 A1 20020109 EP 2000-920216 20000407
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO
 JP 2002540796 T2 20021103 JP 2000-609590 20000407
 PRIORITY APPLN. INFO.: US 1999-123203P P 19990407
 WO 2000-US9321 W 20000407

AB The invention provides protein and cDNA sequences of a novel human protein
 DSP-9, which has sequences homologous with dual-specificity MAP kinase
phosphatase. The protein DSP-9 may be used, for example, to
 identify antibodies and other agents that inhibit DSP-9 activity. North
 blotting results show significantly higher levels of DSP-9 mRNA in tissues
 of human skeletal muscle, brain, thymus, ovary and testis. The invention
 further relates to the uses of protein DSP-9 for modulating cell
 proliferation, differentiation and survival.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 13 OF 19 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:725734 CAPLUS

DOCUMENT NUMBER: 133:396350

TITLE: Protein and cDNA sequences of a novel human protein
 DSP-4 with dual-specificity MAP kinase
phosphatase activity, and therapeutic uses
 thereof

INVENTOR(S): **Lucbe, Ralf M.**; Wei, Bo

PATENT ASSIGNEE(S): Ceptry, Inc., USA

SOURCE: PCT Int. Appl., 63 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000060099	A1	20001012	WO 2000-US9313	20000407
W:		AE, AG, AL, AM, AT, AU, AZ, BA, BE, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, ES, EE, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JE, JI, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NC, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TH, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AE, BA, BG, BR, BY, CA, CH, CY, CZ, DE, EE, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, SA, SN, SW, ML, MR, NE, SN, TD, TG		
EP 1171014	A1	20021103	EP 2000-921870	20000407
R:		AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO		

JP 2002540796 T2 20021103

JP 2000-609590 20000407

PRIORITY APPLN. INFO.:

US 1999-123203P P 19990407

WO 2000-US9313 W 20000407

uses of protein DSP-4 for modulating cell proliferation, differentiation and survival.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 14 OF 19 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:7257-3 CAPLUS

DOCUMENT NUMBER: 133:291977

TITLE: Protein and cDNA sequences of a novel human protein DSP-7 with dual-specificity MAP kinase **phosphatase** activity, and therapeutic uses thereof

INVENTOR(S): Luche, Ralf M.; Wei, Bo

PATENT ASSIGNEE(S): C-prot, Inc., USA

SOURCE: PCT Int. Appl., 70 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000060093	A1	20001012	WO 2000-US9257	20000407
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CS, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, GR, GU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SS, TC, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GN, GA, GN, GW, ML, MR, NE, SN, TD, TG			
EP 1171613	A1	20020116	EP 2000-921835	20000407
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
JP 2002540794	T2	20021213	JP 2000-609583	20000407

PRIORITY APPLN. INFO.:
US 1993-123207P P 19990407
US 1993-133757P P 19990525
WO 2001-US9257 W 20000407

AB The invention provides protein and cDNA sequences of a novel human protein DSP-7, which has sequences homologous with dual-specificity MAP kinase **phosphatase**. The protein DSP-7 may be used, for example, to identify antibodies and other agents that inhibit DSP-7 activity. Northern blotting results show significantly higher levels of DSP-7 mRNA in tissues of human pre-lethal muscle and testis. The invention further relates to the uses of protein DSP-7 for modulating cell proliferation, differentiation and survival.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 19 OF 19 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:72577-3 CAPLUS

DOCUMENT NUMBER: 133:291977

TITLE: Protein and cDNA sequences of a novel human protein DSP-7 with dual-specificity MAP kinase **phosphatase** activity, and therapeutic uses thereof

INVENTOR(S): Luche, Ralf M.; Wei, Bo

PATENT ASSIGNEE(S): C-prot, Inc., USA

SOURCE: PCT Int. Appl., 70 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

SOURCE: PST Int. Appl., 6 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 3
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000000092	A2	20001012	WO 2000-US9185	20000407
WO 2000000092	A3	20010104		
WO 2000000092	C2	20020819		

W: AE, AG, AL, AM, AN, AU, AZ, BA, BE, BG, BF, BY, CA, CH, CN, CP, CU, CZ, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, ME, MG, MK, MN, MW, MX, NC, NE, NG, NL, NO, NZ, PA, PE, PG, PH, PI, PK, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AC, BY, BG, BK, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TC, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

WO 2001002581	A1	20010111	WO 2000-US10868	20000420
---------------	----	----------	-----------------	----------

W: AE, AG, AL, AM, AN, AU, AZ, BA, BE, BG, BF, BY, CA, CH, CN, CP, CU, CZ, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, ME, MG, MK, MN, MW, MX, NC, NE, NG, NL, NO, NZ, PA, PE, PG, PH, PI, PK, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AC, BY, BG, BK, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TC, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

WO 2001002582	A1	20010111	WO 2000-US10207	20000429
---------------	----	----------	-----------------	----------

W: AE, AG, AL, AM, AN, AU, AZ, BA, BE, BG, BF, BY, CA, CH, CN, CP, CU, CZ, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, ME, MG, MK, MN, MW, MX, NC, NE, NG, NL, NO, NZ, PA, PE, PG, PH, PI, PK, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AC, BY, BG, BK, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MC, SD, SL, SZ, TC, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:
 US 1998-118225P P 19990407
 US 1998-143338P P 19990702
 WO 2000-US9185 A 20000407
 WO 2000-US10868 A 20000420

AB The invention provides protein and cDNA sequences of a novel human protein DSP-3, which has sequences homologous with dual-specificity MAP kinase **phosphatase**. The protein DSP-3 may be used, for example, to identify antibodies and other agents that inhibit DSP-3 activity. North blotting results show significantly higher levels of DSP-3 mRNA in tissues of heart, liver, skeletal muscle and pancreas. The invention further relates to the uses of protein DSP-3 for modulating cell proliferation, differentiation and survival.

phosphatase

thereof
 INVENTOR S : **Luche, Ralf M.; Wei, Bo**
 PATENT ASSIGNEE(S): **Ceptys, Inc., USA**
 SOURCE: **PCT Int. Appl., 51 pp.**
CODEN: SIXXDC
 DOCUMENT TYPE: **Patent**
 LANGUAGE: **English**
 FAMILY ACC. NUM. COUNT: **1**
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000056882	A1	20000928	WO 2000-US7589	20000322
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NC, NE, NL, NO, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TR, TM RW: GH, GM, KE, LS, MW, SD, SI, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG EP 1165805 A1 20020102 EP 2000-919530 20000322 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO JP 2002539792 T2 20021126 JP 2001-606753 20000322 PRIORITY APPLN. INFO.: US 1994-115357P P 19990324 US 2000-517376 A 20000316 WO 2000-US7589 W 20000322				

A5 The invention provides protein and cDNA sequences of a novel human protein DSP-2, which has sequences homologous with dual-specificity MAP kinase **phosphatase**. The protein DSP-2 may be used, for example, to identify antibodies and other agents that inhibit DSP-2 activity. North blotting results show significantly higher levels of DSP-2 mRNA in tissues of the immune system and testis. The invention further relates to the uses of protein DSP-2 for modulating cell proliferation, differentiation and survival.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 17 OF 19 CAPLUS COPYRIGHT 2001 ACS
 ACCESSION NUMBER: 2000:846042 CAPLUS
 DOCUMENT NUMBER: 153:216826
 TITLE: **DSP-2 dual-specificity phosphatase**
 INVENTOR(S): **Luche, Ralf M.; Wei, Bo**
 PATENT ASSIGNEE(S): **Ceptys, Inc., USA**
 SOURCE: **PCT Int. Appl., 51 pp.**
CODEN: SIXXDC
 DOCUMENT TYPE: **Patent**
 LANGUAGE: **English**
 FAMILY ACC. NUM. COUNT: **1**
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
------------	------	------	-----------------	------

AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NC, NE, NL, NO, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TR, TM

MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
SK, SL, TJ, TM, TR, TT, TZ, UA, US, UZ, VN, YU, ZA, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TN, TM
RW: GH, GM, HE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, IE,
DK, ES, FI, FR, GB, GR, IE, IT, LJ, MC, NL, PT, SE, BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-123255P P 19990308

AB Comps. and methods are provided for the treatment of conditions assocd. with cell proliferation, cell differentiation and/or cell survival. In particular, the dual-specificity **phosphatase** DSP-1, and polypeptide variants thereof that stimulate dephosphorylation of DSP-1 substrates, are provided. The polypeptides may be used, for example, to identify antibodies and other agents that inhibit DSP-1 activity. The polypeptides and agents may be used to modulate cell proliferation, cell differentiation and cell survival for such disorders include cancer, graft-vs-host disease, autoimmune disease, allergies, metabolic disease, and abnormal cell growth or proliferation, and cell cycle abnormalities..

L12 ANSWER 18 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 2003:239124 BIOSIS

DOCUMENT NUMBER: PREV200300239124

TITLE: DSP-10 dual specificity **phosphatase**.

AUTHOR(S): **Luche, Ralf M (1)**; Wei, Bo

CORPORATE SOURCE: (1) Seattle, WA, USA USA

ASSIGNEE: Ceptor, Inc.

PATENT INFORMATION: US 6551310 April 22, 2003

SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Apr. 22 2003) Vol. 1269, No. 4, pp. No
Pagination. <http://www.uspto.gov/web/menu/patdata.html>.
e-file.

ISSN: 0098-1136.

DOCUMENT TYPE: Patent

LANGUAGE: English

AB Compositions and methods are provided for the treatment of conditions associated with cell proliferation, cell differentiation and cell survival. In particular, the dual-specificity **phosphatase** DSP-10, and polypeptide variants thereof that stimulate dephosphorylation of DSP-10 substrates, are provided. The polypeptides may be used, for example, to identify antibodies and other agents that inhibit DSP-10 activity. The polypeptides and agents may be used to modulate cell proliferation, differentiation and survival.

L12 ANSWER 19 OF 19 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 2003:649215 BIOSIS

DOCUMENT NUMBER: PREV200300649215

TITLE: DSP-1 dual specificity **phosphatase**.

AUTHOR(S): **Luche, Ralf M. (1)**; Wei, Bo

CORPORATE SOURCE: (1) Seattle, WA, USA USA

ASSIGNEE: Ceptor, Inc., Bothell, WA, USA

PATENT INFORMATION: US 6492157 December 10, 2002

SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, Dec. 10 2002 Vol. 1265, No. 2, pp. No
Pagination. <http://www.uspto.gov/web/menu/patdata.html>.
e-file.

AB Compositions and methods are provided for the treatment of conditions associated with cell proliferation, cell differentiation and cell survival. In particular, the dual-specificity **phosphatase** DSP-1,

and polypeptide variants thereof that stimulate dephosphorylation of DSP-9 substrates, are provided. The polypeptides may be used, for example, to identify antibodies and other agents that inhibit DSP-9 activity. The polypeptides and agents may be used to modulate cell proliferation, differentiation and survival.

=> s dsp-12 and phosphatase?

L13 2 DSP-12 AND PHOSPHATASE

=> dup rem l13

PROCESSING COMPLETED FOR L13

L14 1 DUP REM L13 (1 DUPLICATE REMOVED)

=> d l14 ibib ab

L14 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 1
 ACCESSION NUMBER: 2501:582056 CAPLUS
 DOCUMENT NUMBER: 135:163437
 TITLE: Protein and cDNA sequences of novel human proteins
DSP-12 and **DSP-13** with
 dual specificity MAP kinase **phosphatase**
 activity, and therapeutic uses thereof
 INVENTOR(S): Luche, Ralf M.; Wei, Bo
 PATENT ASSIGNEE(S): Ceptyr, Inc., USA
 SOURCE: PCT Int. Appl., 81 pp.
 CODEN: PIMXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001057221	A2	20010809	WO 2001-US3429	20010201
WO 2001057221	A3	20020321		

W: AE, AG, AL, AM, AT, AU, AV, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CR, CU, CZ, DE, DK, DM, DO, EE, ES, FI, GB, GD, GE, GH, GM, HR,
 HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
 LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
 SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
 YU, ZA, ZW, AM, AZ, BY, BG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 IE, IL, ES, FI, FR, GR, DE, IE, IT, LU, MC, NL, PT, SE, TR, BE,
 EL, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 2001/0147999 A1 20011010 US 2001/0172851 A1 20011010

141 BITY ABLEN. INFO.: US 2001/0172851 A1 20011010
 AB The invention provides protein and cDNA sequences of novel human proteins
DSP-12 and **DSP-13**, which have sequences homologous with
 dual-specificity MAP kinase **phosphatase**. The proteins
DSP-12 and **DSP-13** may be used, for example, to identify
 antibodies and other agents that inhibit **DSP-12** or
DSP-13 activity. RT-PCR anal. shows **DSP-12** and **DSP-13**
 mRNAs in all human tissues analyzed, including brain, thymus, placenta,

=> s l12 and dsp-12
L15 1 L12 AND DSP-12

=> d his

{FILE 'HOME' ENTERED AT 15:41:30 ON 29 MAY 2003}

FILE 'MEDLINE, CAPLUS, BIOSIS, BIOTECHDS, SCISEARCH, EMBASE' ENTERED AT
15:42:18 ON 29 MAY 2003

L1 0 S LEU VAL HIS CYS LYS MET GLY VAL SER ARG SER ALA SER THR VAL I
L2 0 S LEU VAL HIS CYS LYS MET GLY VAL SER ARG SER ALA SER THR VAL I
L3 0 S LEU VAL HIS CYS LYS MET GLY VAL SER ARG SER
L4 0 S LEU VAL HIS CYS LYS
L5 0 S MET GLY VAL SER ARG SER ALA SER THR VAL ILE ALA TYR ALA MET L
L6 0 S MET GLY VAL SER ARG SER ALA SER THR VAL ILE ALA TYR ALA MET L
L7 0 S LUCHE FAIF M/AU
L8 0 S LUCHE M FAIF AU
E LUCHE M FAIF AU
E LUCHE FAIF M/AU
L9 0 S LUCHE FAIF M AU
L10 28 S LUCHE FAIF M/AU
L11 26 DUP REM L10 (2 DUPLICATES REMOVED)
L12 19 S L11 AND PHOSPHATASE
L13 2 S DSP-12 AND PHOSPHATASE?
L14 1 DUP REM L13 (1 DUPLICATE REMOVED)
L15 1 S L12 AND DSP-12

=> log y

COST IN U.S. DOLLARS

SINCE FILE
ENTRY

TOTAL
SESSION
262.92 263.13

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE
ENTRY

TOTAL
SESSION
-11.72 -11.72

CA SUBSCRIBER PRICE

STN INTERNATIONAL LOGOFF AT 15:50:05 ON 29 MAY 2003